

REMARKS

The Examiner's action of August 24, 2004 is noted in which the claims are rejected under 35 USC 102 and 103. Moreover, the Drawings are objected to for inclusion of a reference number for two separate elements.

Applicant has amended Page 9, Line 20 to indicate that the conical surface is not "36" as indicated, but "37;" and has indicated same in the substitute drawing submitted herewith. Moreover, in a review of the Patent Application it was found that on Figure 6 there is a reference character error in that item "34" should in fact be item "36," to make it consistent with the remainder of the case.

The above changes are submitted herewith in a Letter to the Official Draftsman subject to Examiner's approval.

Note that the Specification has been amended at Page 2, Line 19 to insert the nomenclature for VSWR to mean "voltage standing wave ratio," as suggested by the Examiner.

Removal of these grounds of objection is therefore earnestly solicited.

This leaves the rejection of the claims under 35 USC 102.

With respect to the 35 USC 102 rejection of Claims 9, 10, and 15, it will be appreciated that absolutely nowhere in Rappaport is shown a method for increasing the bandwidth of anything, much less a monocone antenna. While the Examiner has cited Rappaport as having some formulas relating to monocone antennas, absolutely nowhere is the diameter m related to the bandwidth of the antenna.

In point of fact, the whole import of Rappaport at Column 1, Line 1 to Column 2, Line 30 is to assert that one can tune the antenna by use of a tuning stub. Note that there is no tuning stub at all in the subject invention.

Most importantly, the Rappaport patent does not show how one can increase the bandwidth by increasing the size of the monocone to decrease the low frequency cutoff without increasing the size of the apex base.

It is Applicant's contention that one looking at the formulas generated by Rappaport would have no clue as to how to increase bandwidth because simply increasing the size of the cone naturally leads to an increase in the size of the base. Applicant teaches not to increase the apex base and this is counterintuitive.

In view of the fact that absolutely nowhere in Rappaport is shown "a method for increasing the bandwidth of a monocone antenna" and in view of the fact that the formulas included therein do not indicate how such can be obtained, it is Applicant's contention that Claim 9 and the claims that depend therefrom are allowable.

This leaves the rejection of the claims under 35 USC 103, in view of Wong, Josypenko and Olson.

With respect to Claim 1, both the Examiner and Applicant contend that Wong teaches operating between 11.8 GHz and 14.8 GHz. This is not an ultra-wideband antenna or even a wideband antenna as recited in Claim 1. Nor as claimed in Claim 16 is the antenna of Wong an ultrawide bandwidth antenna.

As specified in Column 3, Lines 53-55, Wong says specifically that it is the dielectric rod that provides whatever bandwidth is achievable in Wong.

Wong states as follows:

“Moreover, inclusion of the dielectric rod 28 within the tapered waveguide 22 extends the operative bandwidth of the antenna 10. By providing a relatively wide operative frequency band (11.8 to 14.8 GHz in the embodiment of FIGG. 1), the antenna 10 is disposed to simultaneously function in a transmit and receive mode.”

Wong does not teach an 18:1 antenna, but rather one that has a bandwidth much, much less. Not only does Wong teach away from an ultrawide bandwidth antenna, but he also uses an element which is not found in the subject antenna to provide whatever meager bandwidth he says he can achieve.

Additionally, the Examiner states that frequency scaling is well known in the art. What this would mean would be that if one wanted a lower frequency cutoff for an antenna, one would have to increase its size. However, absolutely nowhere in the art cited is shown the ability to increase the low frequency cutoffs by enlarging the antenna, yet maintain the high frequency cutoff by keeping the apex size such as to support the high frequency cutoff.

What would have been obvious is that if one wanted to increase the low frequency cutoff, one would simply scale up the entire antenna, including its base. This, however, would not result in the 18:1 operational bandwidth claimed.

It is thus Applicant's contention that unlike what the Examiner is saying, traditional frequency scaling would not result in the claimed antenna.

Moreover, Claim 1 was rejected in combination with Josypenko which the Examiner says shows a VSWR over a bandwidth of less than 2:1. However, as taught by Josypenko he can only achieve an 11% bandwidth, which means a 9:1 bandwidth ratio. On the other hand, as claimed, using the concepts of the subject invention, one can achieve an 18:1 bandwidth.

Applicant cannot understand how it would be obvious to go from an antenna that has a 9:1 bandwidth to one that has an 18:1 bandwidth without using Applicant's unusual constraints on the dimensions of the cone.

In point of fact, it is Applicant's invention that when one increases the overall size of the antenna without increasing the area or diameter of the apex, one can provide an antenna with the unusual 18:1 bandwidth.

This being the case, Claims 1 and 16 and the claims that depend therefrom are clearly free of the art cited and are not obvious because the cited art points to standard ways of configuring a monocone antenna, which standard ways do not work to provide ultrawide bandwidth. Moreover, the references teach away from an antenna with a VSWR of 2:1 that has an 18:1 bandwidth because all that is achievable, at least according to the Josypenko reference, is a 9:1 bandwidth.

Since the remainder of the claims are dependent claims, it is Applicant's contention that since the independent claims are clearly free of the prior art, the dependent claims are likewise patentable.

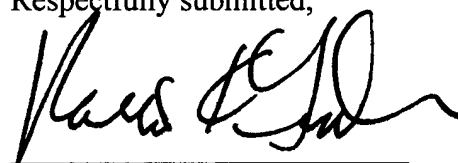
Moreover, with respect to Claim 12 requiring a base diameter of 0.065 inches, neither Rappaport nor Josypenko teaches an antenna that can be "adjusted" for a 2:1 VSWR over an 18:1 bandwidth, since neither of these references talks specifically about an 18:1 bandwidth.

The Examiner says that the invention would be obvious to one skilled in the art to take the system of Rappaport and specifically require an apex-based diameter of 0.065". Applicant disagrees vehemently with this because there is no indication in any of the references cited that one by doing this can obtain a high 18:1 bandwidth with a 2:1 VSWR.

Applicant does not think that any further comments on the dependent claims are appropriate at this time, since it is Applicant's contention that the independent claims are clearly patentable.

Allowance of the claims and issuance of the case is therefore earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Robert K. Tendler', written over a horizontal line.

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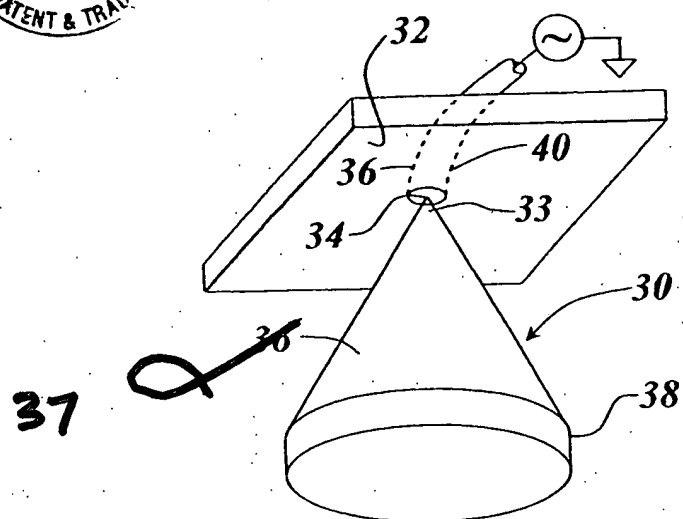


Fig. 2

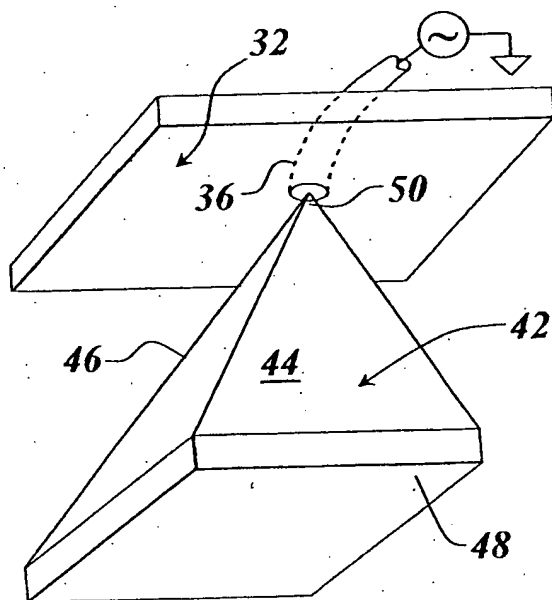


Fig. 3

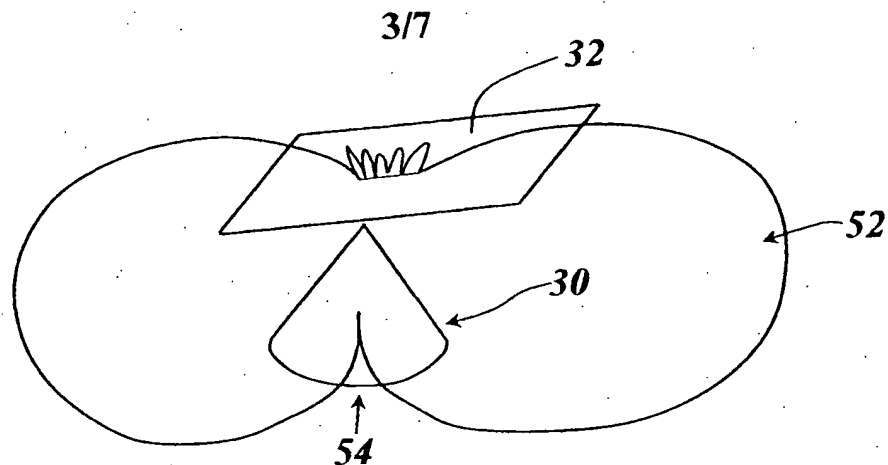


Fig. 4

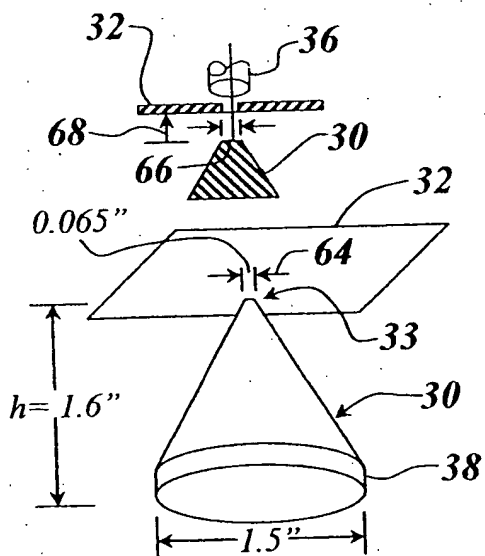


Fig. 5

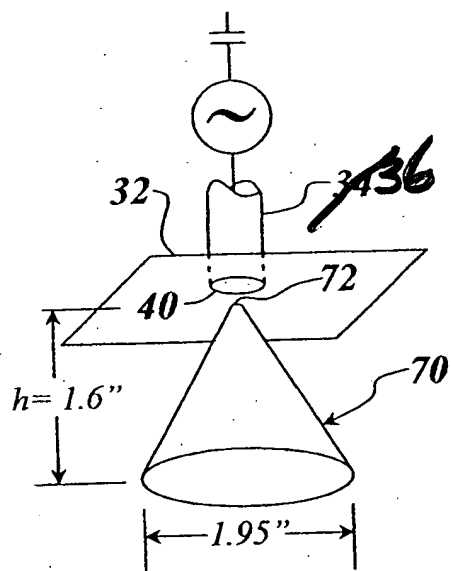


Fig. 6